

REMARKS

Claims 1-4, 19 and 21-25 are pending in this application. By this Amendment, claims 1-3 and 19 are amended and claims 21-25 are added. No new matter is added.

Claims 1 and 19 are amended to recite that the plurality of transducers output at least two hypersonic beams that produce different auditory signals. New claims 21-25 recite at least one transducer array outputting at least two hypersonic beams that produce different auditory signals.

I. The Claims are Patentable over the Applied References

The Office Action rejects claims 1-4 and 19 under 35 U.S.C. §103(a) over U.S. Patent No. 5,889,870 to Norris in view of U.S. Patent Publication No. 2001/0007591 to Pompei. Applicant respectfully traverses the rejection.

The Office Action acknowledges that Norris fails to disclose actively adjusting phase relationships of signals to control the directivity of a hypersonic beam (Office Action, page 3), but alleges that Pompei cures this deficiency.

Pompei discloses a parametric audio system 100 that includes audio sources 102-104, carrier generator 114, modulator 112, delays 120, drivers 118, and transducer array 112 (Fig. 1; paragraph [0022]). The signals from audio sources 102-104 can be separately conditioned but are then summed into a single signal by summer 110 (Fig. 1; paragraph [0022]). Each acoustic transducer of transducer array 112 can have a corresponding delay 120 (Fig. 4; paragraph [0034]). A beam steering control device 124 (Fig. 1) can control the direction and focus of an ultrasonic beam by manipulating the phase relationships between the acoustic transducers (paragraph [0040]). Because all of the audio signals are summed by summer 110, all auditory recipients of the output of Pompei's parametric audio system 100 receive the same audio information.

Regarding independent claim 1, Pompei fails to disclose (1) "encoding the at least two side band signals with different ones of the different audio information" and (2) "wherein at least two of the hypersonic beams produce different auditory signals, the auditory signals corresponding to different ones of the audio signals."

Regarding independent claim 19, the applied references fail to disclose (1) "means for synthesizing a carrier signal and at least two side band signals encoded with different audio information" and (2) "means for transmitting the carrier signal and encoded side band signals from the plurality of transducers, the transducers outputting at least two hypersonic beams that produce different auditory signals corresponding to different ones of the different audio information."

For the foregoing reasons, Applicant requests withdrawal of the rejection.

II. New Claims

Regarding independent claim 21, the applied references fail to disclose a controller that "controls the signal conditioning circuits to adjust amplitudes of the input signals, and controls the delay circuits to adjust delays of the input signals so that the at least one transducer array outputs at least two hypersonic beams focused to deliver different audio information to different audio information recipients."

For the foregoing reasons, new claims 21-25 are patentable over the applied references.

III. Conclusion

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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Date: July 24, 2007

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